

muscle) in the axilla penetrating the brachial plexus in man. *Acta Anat (Basel)*. 1976;96:513–533.

- Buijze GA, Keereweer S, Jennings G, Vorster W, Debeer J. Musculotendinous transfer as a treatment option for irreparable posterolateral rotator cuff tears: teres major or latissimus dorsi? *Clin Anat*. 2007;20:919–923.

Ultrasound-Guided Interscalene Block Should be Compared With the Accepted Standard for the Neurostimulation Technique

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To the Editor:

Kapral et al¹ reported a prospective randomized trial that concluded that ultrasound (US) guidance improves the success rate of interscalene brachial plexus blockade (ISB). The accompanying editorial² correctly pointed to the limitations of the study, but we feel that further elaboration of the study's main disqualifying weakness is warranted. In the nerve stimulation (NS) group, the authors used a motor response in the forearm or hand as an end point for correct needle-tip position.

A forearm or hand response is not warranted for shoulder or upper humeral surgery where the target nerve is the superior trunk, originating from the C5–C6 roots. Neurostimulation of the superior (or middle) trunk at this level results in a deltoid, biceps, proximal triceps, or lateral pectoral motor response. Our combined experience of several-thousand NS-assisted ISBs, both with and without US guidance, is consistent with this anatomy in that a motor response in the forearm or hand is rarely elicited. In fact, in a recent prospective study of 300 ISBs placed with US needle guidance but ultimately using an NS end point,³ there was not a single forearm or hand response observed.

The needle approach depicted in the patient figure is not “tangential,” but longitudinal/lateral (cephalad-to-caudad).^{4,5} If a forearm or hand response is sought using this longitudinal/lateral approach, the needle tip will be too caudad (junction between trunks and divisions), thus in actual fact being a supraclavicular block, which usually misses both suprascapular and supraclavicular (superficial cervical plexus) nerves. Similarly, if a forearm or hand response is intentionally elicited at the trunk level with a tangential needle direction, the needle tip would be too medial

and also too far away from both superior trunk⁶ and supraclavicular nerve. The results of the study were consistent with this. In the NS group, 20 mL of local anesthetic injected using a hand/forearm motor response resulted in only 73 of 80 cases achieving blockade of the C5–C7 roots. Because 57 (71%) of 80 of the procedures in the NS group had surgery to the upper humerus or shoulder, the presence of both unblocked suprascapular and supraclavicular nerves could explain the 5 (9%) of the 57 patients who had inadequate surgical anesthesia. On the other hand, both nerves were probably blocked in the US group as a result of the more superficially placed injection.

Highly experienced US users might very well be able to place a needle deep and close to the posterior elements of the interscalene space to block the distal elements of the brachial plexus. However, it is inappropriate to compare this with NS ISB when it is well recognized that a more distal approach to the brachial plexus (supraclavicular/intraclavicular, axillary) is more effective for distal humeral or elbow surgery and is inherently safer.⁷

It is disappointing that the authors did not cite a recent large prospective study of NS-guided ISB, in which the success rate for surgical anesthesia was 97%.⁸ The NS group of the current study was therefore not strictly “within the range of previously reported success rates....”

Finally, there seems to be a methodological inconsistency that needs to be clarified. The intraoperative observer (S.K.), who “was not involved in any other parts of the study” and “was responsible for the intraoperative management,” presumably made the assessment of block success or failure and therefore the decision to convert to general anesthesia. Earlier, however, it was stated that S.K. was one of the investigators performing the blocks.

Given the recent increase in the popularity of US guidance for peripheral nerve block, randomized trials comparing NS and US localization methods are certainly needed, and we commend Kapral et al for conducting them. If success rates are to be compared, however, it is essential that investigators put any new technique against the currently accepted techniques.^{4,5,8}

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REFERENCES

- Kapral S, Greher M, Huber G, Willschke H, Kettner S, Kdolsky R, et al. Ultrasonographic guidance improves the success rate of interscalene brachial plexus blockade. *Reg Anesth Pain Med*. 2008;33:253–258.
- Salinas FV, Neal JM. A tale of two needle passes. *Reg Anesth Pain Med*. 2008;33:195–198.
- Fredrickson MJ, Ball CM, Dalgleish AJ. Successful continuous interscalene analgesia for ambulatory shoulder surgery in a private practice setting. *Reg Anesth Pain Med*. 2008;33:122–128.
- Boezaart AP, de Beer JF, du Toit C, van Rooyen K. A new technique of continuous interscalene nerve block. *Can J Anaesth*. 1999;46:275–281.
- Borgeat A, Ekatothramis G. Anaesthesia for shoulder surgery. *Best Pract Res Clin Anaesthesiol*. 2002;16:211–225.
- Urmey WF. Interscalene block: the truth about twitches. *Reg Anesth Pain Med*. 2000;25:340–342.
- Benumof JL. Permanent loss of cervical spinal cord function associated with interscalene block performed under general anesthesia. *Anesthesiology*. 2000;93:1541–1544.
- Borgeat A, Dullenkopf A, Ekatothramis G, Nagy L. Evaluation of the lateral modified approach for continuous interscalene block after shoulder surgery. *Anesthesiology*. 2003;99:436–442.

Use a Rifle, Not a Shotgun

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To the Editor:

I happened to read the 2004 Bonica lecture by Daniel Carr¹ entitled “When bad evidence happens to good treatments.” In this article, Dr. Carr makes an unscientific argument that physicians should be allowed to use (and be reimbursed for) treatments on individual patients that have not been shown to be effective in studies involving groups of patients. The rationale seems to be that some patients are “responders” and benefit from the treatment, whereas others (the majority, perhaps) just cloud the statistics with their lack of response.

The argument parallels the thinking of many in the “nontraditional” medical community in which testimonials from